

INJECTION MOLDING SYSTEM WITH FLOW CONTROL

ABSTRACT OF THE DISCLOSURE

An injection molding system includes a manifold and a valve gated hot runner nozzle. The gating mechanism includes an actuated valve pin, where the mold gate orifice is open when the valve pin is in a first position to allow melt to flow there through. The mold gate orifice is closed when the valve pin is in a second position to prevent melt from flowing there through. A first flow control surface is disposed on said valve pin within the melt channel of the nozzle. The first flow control surface has a complementary geometry with that of the melt channel at a second flow control surface. The valve pin is raised and lowered to a lesser degree than that required to seat and unseat the valve pin head to constrict or release the flow of a melt stream in the melt channel.

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